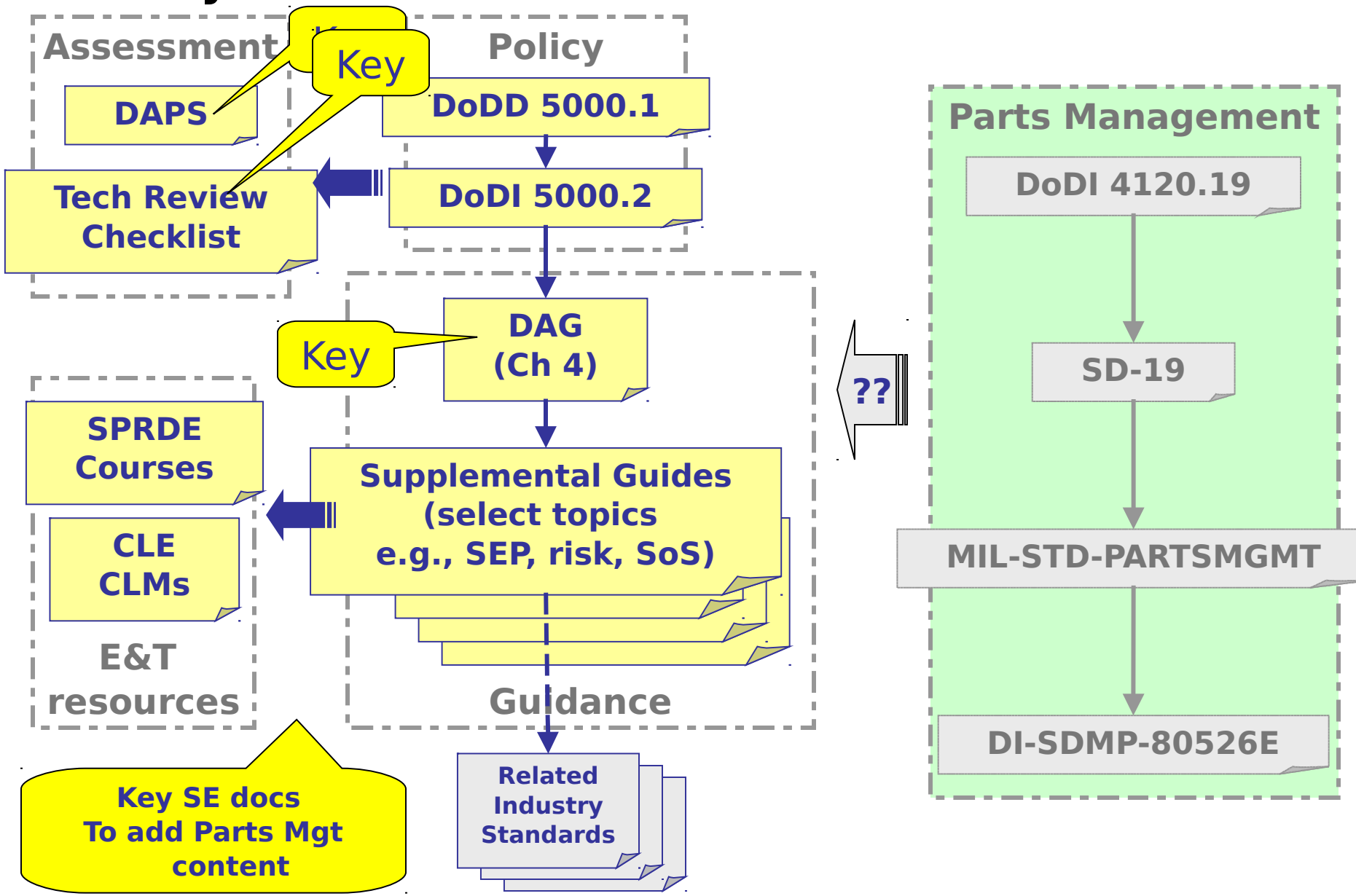
SE Team Agenda

- Review work being done by Dwayne
  - Review Sect 4.4.X for DAG – being processed
  - SEP Guide – being processed; seen as OK
  - Technical Reviews Checklists
    - PDR & CDR recommended; adequate or not? Additions?
  - Injection of “reliability” as rationale for parts management is universal recommendation
- Help Contracting Team with MIL-STD-PARTS and issuance of Policy Letter
- Discuss Exit Strategy with entire PMR IPT

Elements of SE
Policy, Guidance, E&T and Assessment



4.4. Systems Engineering Decisions: Important Design Considerations

4.4.xx. Parts Management

Parts management is a design strategy that seeks to reduce the number of unique or specialized parts used in a system (or across systems) in order to reduce the logistic footprint and lower total life cycle costs. In addition, it also may aid in mitigating parts obsolescence due to diminishing manufacturing sources and material shortages (DMSMS). Parts management is an important design consideration and should be used whenever parts are not defined based on open systems design interfaces or Commercial-off-the-Shelf (COTS) items, as described in sections 4.4.1. and 4.4.5., respectively.

A part is one piece, or two or more pieces joined together, which is not normally subject to disassembly without destruction or impairment of intended design use. A part is the lowest configuration item of the system design that would be implemented and verified. Parts are defined in performance-based terms by their form, fit, function and interfaces.

The parts management strategy should cover the entire life cycle of a system and be based on the fundamental systems engineering processes described in sections 4.2.3. and 4.2.4. The parts management strategy should also be evaluated at the technical reviews described in section 4.3., in particular the Preliminary Design Review and Critical Design Review. The Systems Engineering Plan should address the parts management strategy, including the need for a parts management plan.

A parts management plan typically includes:

- Specification of parts selection criteria based on objectives in the Acquisition Strategy Report and overall support strategy;
- Identification of a preferred parts list;
- Definition of the processes for conducting trade-off analysis, parts selection, inclusion of configuration identification status and related change decisions in the technical baseline, and approval and documentation of non-preferred parts; and
- Discussion of how parts management considerations will flow down to suppliers.

Parts selection should be based on trade-off and cost-benefit analyses that are conducted in accordance with the program's parts strategy and management plan, as derived from the overall acquisition and sustainment strategies. Selected parts should be documented in a parts list, which is under configuration management of the overall technical baseline.

See MIL-HDBK-512A, DoD Handbook for Parts Management,
SD-19: Life Cycle Cost Savings Through Parts Management, and related industry specifications, such as AIA and ANSI/AIAA-R-100 and ANSI/EIA-4899, for more details on recommended parts management practices.
Reduce Program Costs: Through Parts Management provides details for conducting a business case for having a Parts Management Program. Addition information is on the Parts Standardization & Management Committee

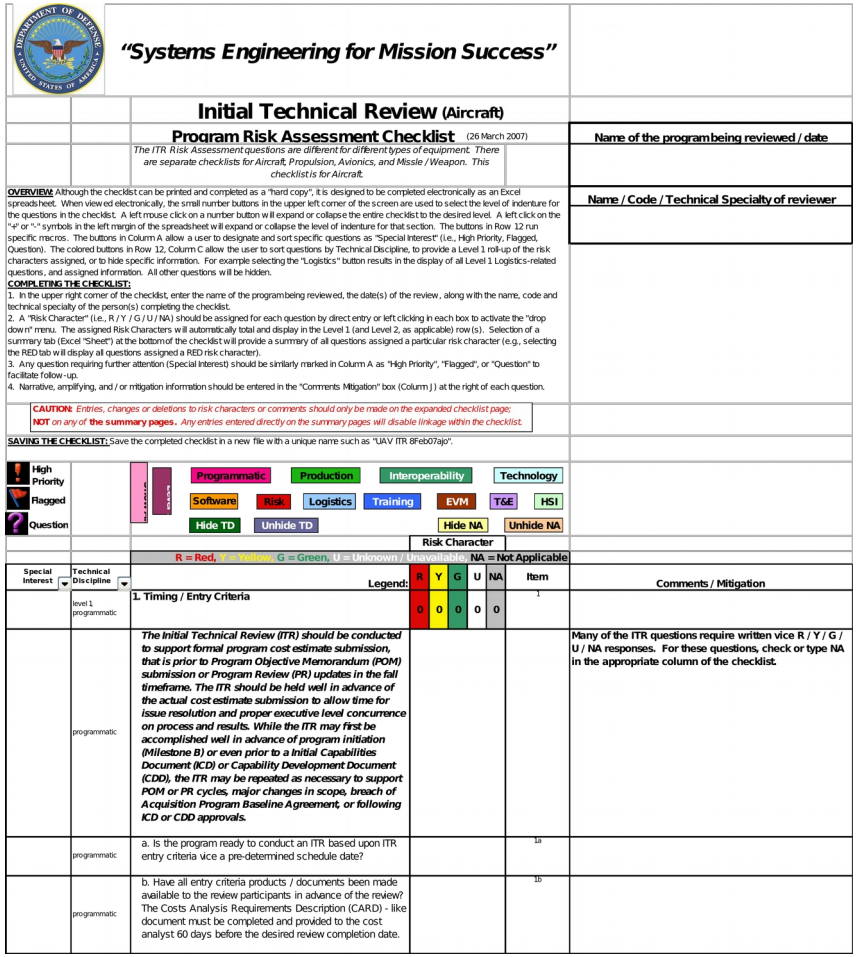
4.4. Systems Engineering Decisions: Important Design Considerations

4.4.xx. Diminishing Manufacturing Sources and Material Shortages (DMSMS)

Diminishing Manufacturing Sources and Materiel Shortages (DMSMS) is the loss, or impending loss, of manufacturers of items or suppliers of items or raw materials. The military loses a manufacturer when that manufacturer discontinues (or plans to discontinue) production of needed components or raw materials. This situation may cause shortages that endanger the life cycle support and capability of the weapon system or equipment. An effective approach to such a pervasive problem hinges on being proactive so that potential availability problems are resolved before they cause some crises in readiness or spending. SD-22, DMSMS Guidebook provides more information on related design considerations.

While DMSMS can have a huge impact on total life cycle cost, Parts Management is a strategy for mitigation or avoiding DMSMS problems. System Engineering Plans should include a robust section on Parts Management. SD-19: Life Cycle Cost Savings Through Parts Management provides more detailed information on the application.

Risk Checklists - ITR



"Systems Engineering for Mission Success"

Initial Technical Review (Aircraft)

Program Risk Assessment Checklist (26 March 2007)

The ITR Risk Assessment questions are different for different types of equipment. There are separate checklists for Aircraft, Propulsion, Avionics, and Missle / Weapon. This checklist is for Aircraft.

Name of the program being reviewed / date

Name / Code / Technical Specialty of reviewer

OVERVIEW: Although the checklist can be printed and completed as a "hard copy", it is designed to be completed electronically as an Excel spreadsheet. When viewed electronically, the small number buttons in the upper left corner of the screen are used to select the level of indenture for the questions in the checklist. A left mouse click on a number button will expand or collapse the entire checklist to the desired level. A left click on the "+" or "-" symbols in the left margin of the spreadsheet will expand or collapse the level of indenture for that section. The buttons in Row 12 run specific macros. The buttons in Column A allow a user to designate and sort specific questions as "Special Interest" (i.e., High Priority, Flagged, Question). The colored buttons in Row 12, Column C allow the user to sort questions by Technical Discipline, to provide a Level 1 roll-up of the risk characters assigned, or to hide specific information. For example selecting the "Logistics" button results in the display of all Level 1 Logistics-related questions, and assigned information. All other questions will be hidden.

COMPLETING THE CHECKLIST:

1. In the upper right corner of the checklist, enter the name of the program being reviewed, the date(s) of the review, along with the name, code and technical specialty of the person(s) completing the checklist.
2. A "Risk Character" (i.e., R / Y / G / U / NA) should be assigned for each question by direct entry or left clicking in each box to activate the "drop down" menu. The assigned Risk Characters will automatically total and display in the Level 1 (and Level 2, as applicable) row(s). Selection of a summary tab (Excel "Sheet") at the bottom of the checklist will provide a summary of all questions assigned a particular risk character (e.g., selecting the RED tab will display all questions assigned a RED risk character).
3. Any question requiring further attention (Special Interest) should be similarly marked in Column A as "High Priority", "Flagged", or "Question" to facilitate follow-up.
4. Narrative, amplifying, and / or mitigation information should be entered in the "Comments Mitigation" box (Column J) at the right of each question.

CAUTION: *Entries, changes or deletions to risk characters or comments should only be made on the expanded checklist page;* **NOT** *on any of* **the summary pages.** *Any entries entered directly on the summary pages will disable linkage within the checklist.*

SAVING THE CHECKLIST: Save the completed checklist in a new file with a unique name such as "UAV ITR 8Feb07ajo".

High Priority
Flagged
Question

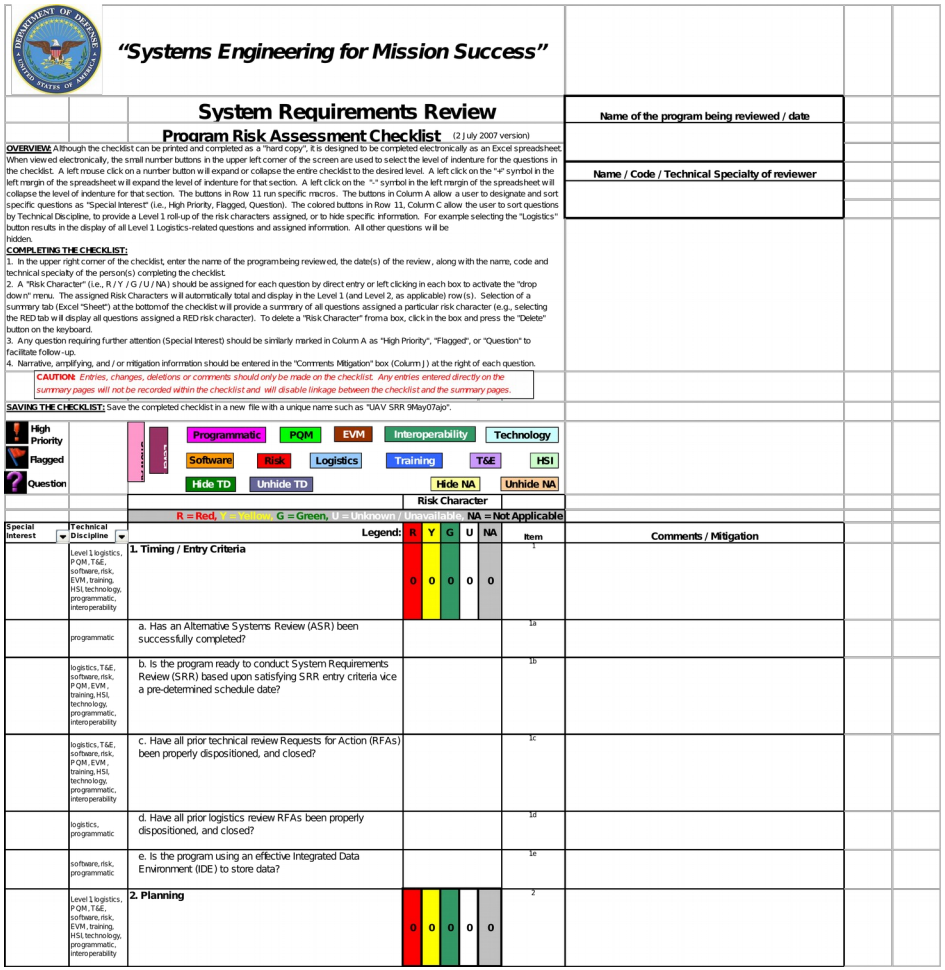
Programmatic | Production | Interoperability | Technology
Software | Risk | Logistics | Training | EVM | T&E | HSI
Hide TD | Unhide TD | Hide NA | Unhide NA

Risk Character

R = Red, Y = Yellow, G = Green, U = Unknown / Unavailable, NA = Not Applicable

Special Interest	Technical Discipline	Legend:	R	Y	G	U	NA	Item	Comments / Mitigation
	level 1 programmatic	**1. Timing / Entry Criteria**	0	0	0	0	0	1	
	programmatic	***The Initial Technical Review (ITR) should be conducted to support formal program cost estimate submission, that is prior to Program Objective Memorandum (POM) submission or Program Review (PR) updates in the fall timeframe. The ITR should be held well in advance of the actual cost estimate submission to allow time for issue resolution and proper executive level concurrence on process and results. While the ITR may first be accomplished well in advance of program initiation (Milestone B) or even prior to a Initial Capabilities Document (ICD) or Capability Development Document (CDD), the ITR may be repeated as necessary to support POM or PR cycles, major changes in scope, breach of Acquisition Program Baseline Agreement, or following ICD or CDD approvals.***							**Many of the ITR questions require written vice R / Y / G / U / NA responses. For these questions, check or type NA in the appropriate column of the checklist.**
	programmatic	a. Is the program ready to conduct an ITR based upon ITR entry criteria vice a pre-determined schedule date?						1a	
	programmatic	b. Have all entry criteria products / documents been made available to the review participants in advance of the review? The Costs Analysis Requirements Description (CARD) - like document must be completed and provided to the cost analyst 60 days before the desired review completion date.						1b	

Risk Checklists - SRR



"Systems Engineering for Mission Success"

System Requirements Review

Program Risk Assessment Checklist (2 July 2007 version)

Name of the program being reviewed / date

Name / Code / Technical Specialty of reviewer

OVERVIEW: Although the checklist can be printed and completed as a "hard copy", it is designed to be completed electronically as an Excel spreadsheet. When viewed electronically, the small number buttons in the upper left corner of the screen are used to select the level of indenture for the questions in the checklist. A left mouse click on a number button will expand or collapse the entire checklist to the desired level. A left click on the "+" symbol in the left margin of the spreadsheet will expand the level of indenture for that section. A left click on the "-" symbol in the left margin of the spreadsheet will collapse the level of indenture for that section. The buttons in Row 11 run specific macros. The buttons in Column A allow a user to designate and sort specific questions as "Special Interest" (i.e., High Priority, Flagged, Question). The colored buttons in Row 11, Column C allow the user to sort questions by Technical Discipline, to provide a Level 1 roll-up of the risk characters assigned, or to hide specific information. For example selecting the "Logistics" button results in the display of all Level 1 Logistics-related questions and assigned information. All other questions will be hidden.

COMPLETING THE CHECKLIST:

1. In the upper right corner of the checklist, enter the name of the program being reviewed, the date(s) of the review, along with the name, code and technical specialty of the person(s) completing the checklist.
2. A "Risk Character" (i.e., R / Y / G / U / NA) should be assigned for each question by direct entry or left clicking in each box to activate the "drop down" menu. The assigned Risk Characters will automatically total and display in the Level 1 (and Level 2, as applicable) row(s). Selection of a summary tab (Excel "Sheet") at the bottom of the checklist will provide a summary of all questions assigned a particular risk character (e.g., selecting the RED tab will display all questions assigned a RED risk character). To delete a "Risk Character" from a box, click in the box and press the "Delete" button on the keyboard.
3. Any question requiring further attention (Special Interest) should be similarly marked in Column A as "High Priority", "Flagged", or "Question" to facilitate follow-up.
4. Narrative, amplifying, and / or mitigation information should be entered in the "Comments Mitigation" box (Column J) at the right of each question.

CAUTION: *Entries, changes, deletions or comments should only be made on the checklist. Any entries entered directly on the summary pages will not be recorded within the checklist and will disable linkage between the checklist and the summary pages.*

SAVING THE CHECKLIST: Save the completed checklist in a new file with a unique name such as "UAV SRR 9May07ajo".

High Priority
Flagged
Question

Sort Checklist | Sort Risks

Programmatic | PQM | EVM | Interoperability | Technology
Software | Risk | Logistics | Training | T&E | HSI
Hide TD | Unhide TD | Hide NA | Unhide NA

Risk Character

R = Red, Y = Yellow, G = Green, U = Unknown / Unavailable, NA = Not Applicable

Special Interest	Technical Discipline	Legend:	R	Y	G	U	NA	Item	Comments / Mitigation
	Level 1 logistics, PQM, T&E, software, risk, EVM, training, HSI, technology, programmatic, interoperability	**1. Timing / Entry Criteria**	0	0	0	0	0	1	
	programmatic	a. Has an Alternative Systems Review (ASR) been successfully completed?						1a	
	logistics, T&E, software, risk, PQM, EVM, training, HSI, technology, programmatic, interoperability	b. Is the program ready to conduct System Requirements Review (SRR) based upon satisfying SRR entry criteria vice a pre-determined schedule date?						1b	
	logistics, T&E, software, risk, PQM, EVM, training, HSI, technology, programmatic, interoperability	c. Have all prior technical review Requests for Action (RFAs) been properly dispositioned, and closed?						1c	
	logistics, programmatic	d. Have all prior logistics review RFAs been properly dispositioned, and closed?						1d	
	software, risk, programmatic	e. Is the program using an effective Integrated Data Environment (IDE) to store data?						1e	
	Level 1 logistics, PQM, T&E, software, risk, EVM, training, HSI, technology, programmatic, interoperability	**2. Planning**	0	0	0	0	0	2	

Risk Checklists - CDR

"Systems Engineering for Mission Success"

Critical Design Review

Program Risk Assessment Checklist (6 July 07 version)

Name of the program being reviewed / date

Name / Code / Technical Specialty of reviewer

OVERVIEW: Although the checklist can be printed and completed as a "hard copy", it is designed to be completed electronically as an Excel spreadsheet. When viewed electronically, the small number buttons in the upper left corner of the screen are used to select the level of indenture for the questions in the checklist. A left mouse click on a number button will expand or collapse the entire checklist to the desired level. A left click on the "+" symbol in the left margin of the spreadsheet will expand the level of indenture for that section. A left click on the "-" symbol in the left margin of the spreadsheet will collapse the level of indenture for that section. The buttons in Row 11 run specific macros. The buttons in Column A allow a user to designate and sort specific questions as "Special Interest" (i.e., High Priority, Flagged, Question). The colored buttons in Row 11, Column C allow the user to sort questions by Technical Discipline, to provide a Level 1 roll-up of the risk characters assigned, or to hide specific information. For example selecting the "Logistics" button results in the display of all Level 1 Logistics-related questions and assigned information. All other questions will be hidden.

COMPLETING THE CHECKLIST:

1. In the upper right corner of the checklist, enter the name of the program being reviewed, the date(s) of the review, along with the name, code and technical specialty of the person(s) completing the checklist.
2. A "Risk Character" (i.e., R / Y / G / U / NA) should be assigned for each question by direct entry or left clicking in each box to activate the "drop down" menu. To delete a "Risk Character" from a box, click in the box and press the "Delete" button on the keyboard, or right click on the cell and select "clear contents". The assigned Risk Characters will automatically total and display in the Level 1 (and Level 2, as applicable) row(s). Selection of a summary tab (Excel "Sheet") at the bottom of the checklist will provide a summary of all questions assigned a particular risk character (e.g., selecting the RED tab will display all questions assigned a RED risk character).
3. Any question requiring further attention (Special Interest) should be similarly marked in Column A as "High Priority", "Flagged", or "Question" to facilitate follow-up.
4. Narrative, amplifying, and / or mitigation information should be entered in the "Comments / Mitigation" box (Column J) at the right of each question.

CAUTION: *Entries, changes or deletions to risk characters or comments should only be made on the expanded checklist page;* **NOT** *on any of* **the summary pages.** *Any entries entered directly on the summary pages will disable linkage within the checklist.*

SAVING THE CHECKLIST: Save the completed checklist in a new file with a unique name such as "UAV FRR 8Feb07ajo".

High Priority | Flagged | Question

Programmatic | PQM | EVM | Interoperability | Technology

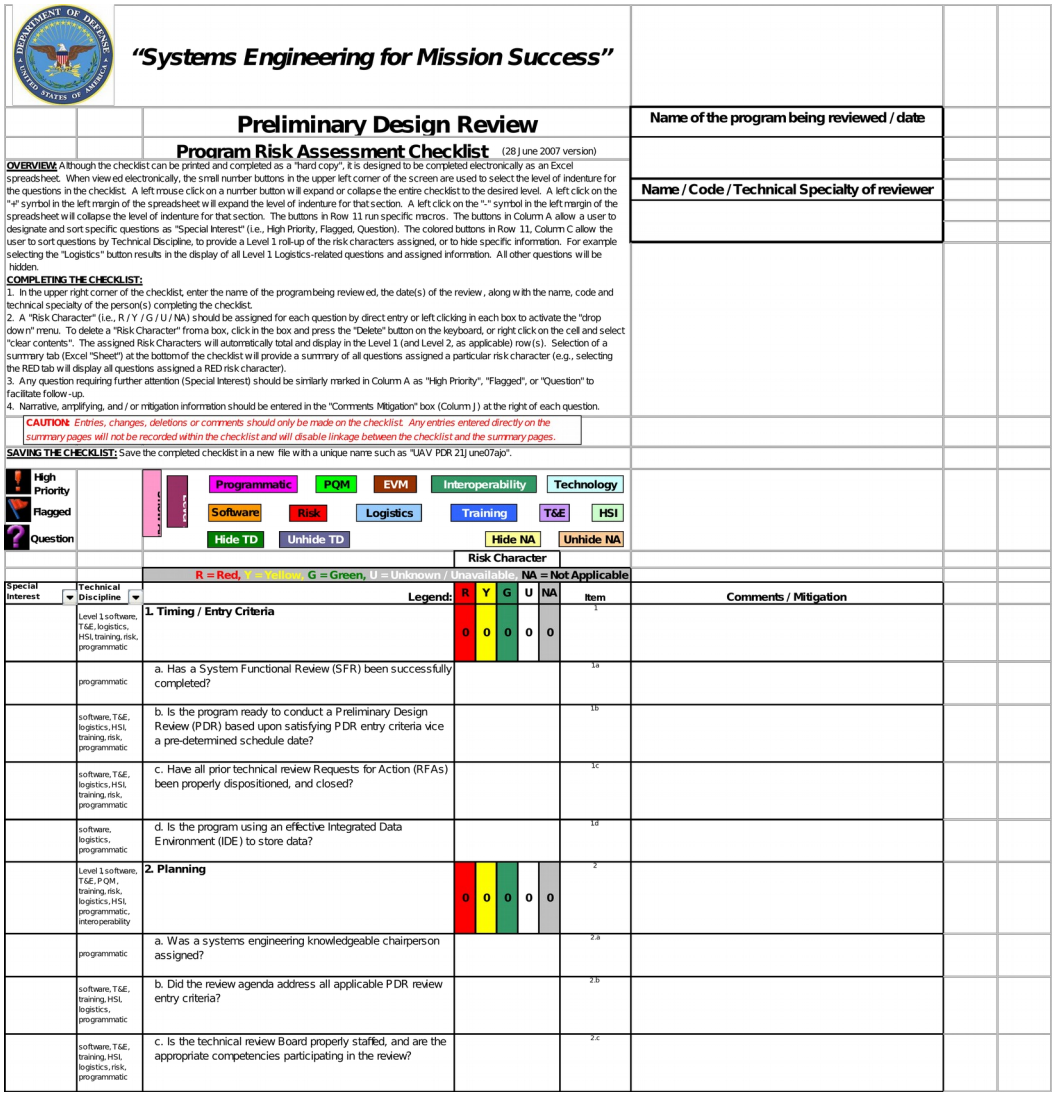
Software | Risk | Logistics | Training | T&E | HSI

Hide TD | Unhide TD | Hide NA | Unhide NA

R = Red, Y = Yellow, G = Green, U = Unknown / Unavailable, NA = Not Applicable

Special Interest	Technical Discipline	Legend:	Risk Character R	Y	G	U	NA	Item	Comments / Mitigation
	level 1 logistics, risk, technology, T&E, software, HSI, training, programmatic	**1. Timing / Entry Criteria**	0	0	0	0	0	1	
	programmatic	a. Has a Preliminary Design Review (PDR) been successfully completed?						1a	
	training, T&E, software, risk, logistics, HSI, technology, programmatic	b. Readiness for Critical Design Review (CDR)	0	0	0	0	0	1b	
	technology, T&E, software, risk, logistics, HSI, programmatic	(1) Is the program ready to conduct a CDR based upon CDR entry criteria vice a pre-determined schedule date?						1b(1)	
	logistics, programmatic	(2) Have updates to the systems specification and functional specification been completed?						1b(2)	
	software, logistics, programmatic	(3) Have product specifications for each hardware and software configuration item, along with supporting trade-off analyses and data been completed?						1b(3)	
	risk	(4) Is a current program risk assessment available?						1b(4)	
	logistics, technology	(5) Was a Systems Engineering Plan (SEP - formerly Systems Engineering Management Plan (SEMP)) been developed and implemented?						1b(5)	
	logistics, programmatic	(6) Have Cost Analysis Requirements Description (CARD) changes been completed?						1b(6)	

Risk Checklists - PDR



"Systems Engineering for Mission Success"

Preliminary Design Review

Program Risk Assessment Checklist (28 June 2007 version)

Name of the program being reviewed / date

Name / Code / Technical Specialty of reviewer

OVERVIEW: Although the checklist can be printed and completed as a "hard copy", it is designed to be completed electronically as an Excel spreadsheet. When viewed electronically, the small number buttons in the upper left corner of the screen are used to select the level of indenture for the questions in the checklist. A left mouse click on a number button will expand or collapse the entire checklist to the desired level. A left click on the "+" symbol in the left margin of the spreadsheet will expand the level of indenture for that section. A left click on the "-" symbol in the left margin of the spreadsheet will collapse the level of indenture for that section. The buttons in Row 11 run specific macros. The buttons in Column A allow a user to designate and sort specific questions as "Special Interest" (i.e., High Priority, Flagged, Question). The colored buttons in Row 11, Column C allow the user to sort questions by Technical Discipline, to provide a Level 1 roll-up of the risk characters assigned, or to hide specific information. For example selecting the "Logistics" button results in the display of all Level 1 Logistics-related questions and assigned information. All other questions will be hidden.

COMPLETING THE CHECKLIST:

1. In the upper right corner of the checklist, enter the name of the program being reviewed, the date(s) of the review, along with the name, code and technical specialty of the person(s) completing the checklist.
2. A "Risk Character" (i.e., R / Y / G / U / NA) should be assigned for each question by direct entry or left clicking in each box to activate the "drop down" menu. To delete a "Risk Character" from a box, click in the box and press the "Delete" button on the keyboard, or right click on the cell and select "clear contents". The assigned Risk Characters will automatically total and display in the Level 1 (and Level 2, as applicable) row(s). Selection of a summary tab (Excel "Sheet") at the bottom of the checklist will provide a summary of all questions assigned a particular risk character (e.g., selecting the RED tab will display all questions assigned a RED risk character).
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4. Narrative, amplifying, and / or mitigation information should be entered in the "Comments Mitigation" box (Column J) at the right of each question.

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SAVING THE CHECKLIST: Save the completed checklist in a new file with a unique name such as "UAV PDR 21June07ajo".

High Priority
Flagged
Question

Programmatic | PQM | EVM | Interoperability | Technology
Software | Risk | Logistics | Training | T&E | HSI
Hide TD | Unhide TD | Hide NA | Unhide NA

Risk Character

R = Red, Y = Yellow, G = Green, U = Unknown / Unavailable, NA = Not Applicable

Special Interest	Technical Discipline	Legend:	R	Y	G	U	NA	Item	Comments / Mitigation
	Level 1 software, T&E, logistics, HSI, training, risk, programmatic	**1. Timing / Entry Criteria**	0	0	0	0	0	1	
	programmatic	a. Has a System Functional Review (SFR) been successfully completed?						1a	
	software, T&E, logistics, HSI, training, risk, programmatic	b. Is the program ready to conduct a Preliminary Design Review (PDR) based upon satisfying PDR entry criteria vice a pre-determined schedule date?						1b	
	software, T&E, logistics, HSI, training, risk, programmatic	c. Have all prior technical review Requests for Action (RFAs) been properly dispositioned, and closed?						1c	
	software, logistics, programmatic	d. Is the program using an effective Integrated Data Environment (IDE) to store data?						1d	
	Level 1 software, T&E, PQM, training, risk, logistics, HSI, programmatic, interoperability	**2. Planning**	0	0	0	0	0	2	
	programmatic	a. Was a systems engineering knowledgeable chairperson assigned?						2.a	
	software, T&E, training, HSI, logistics, programmatic	b. Did the review agenda address all applicable PDR review entry criteria?						2.b	
	software, T&E, training, HSI, logistics, risk, programmatic	c. Is the technical review Board properly staffed, and are the appropriate competencies participating in the review?						2.c	

PMR IPT Exit Strategy

- Recommend PSMC Meeting in San Diego for official handoff of PMR responsibilities
  - Plan: DSPO & PSMC continue to develop policies, advocacy, tools, etc. for Parts Mgt.
  - Policy letter should be signed & articles in popular literature should be prepared to seek out new interest and members.
  - The synergy between DSPO, GIDEP/DLA, TLSCM (or whatever it becomes next), and the PSMC (DoD-sponsored government-industry forum) should provide the direction and turtlepower to take the effort to the next level.